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USE OF CORN, KAFIR, AND COWPEAS IN THE HOME

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THIS bulletin summarizes the results of some tests of the nutritive value of Indian corn, Kafir corn, and cowpeas and ways of preparing them for the table.

They are important crops in the Southern and Southwestern United States, Indian corn being equally important in other regions of the country. It is in the Southern States almost exclusively that cowpeas are grown and used for food; and Kafir corn is particularly well suited to warm regions where rainfall is limited.

The use of Kafir corn and of cowpeas as food might well become more general, as these, like Indian corn, rank high as sources of nutrients.

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INDIAN CORN.

Indian corn is peculiarly an American product, being native to American soil. It was originally a tropical or subtropical plant, but long before America was discovered the native inhabitants, by centuries of attempts to grow it in colder regions, had evolved varieties which would ripen as far north as Montreal—a wonderful accomplishment in agriculture, though achieved without definite plan or design. The ways of preparing it for human food are very numerous, and many of them, like the cereal itself, are of Indian origin.

COMPOSITION OF INDIAN CORN.

The varieties of Indian corn are many, white and yellow types being very common, red not uncommon, and even blue and black corn being found in the southwestern United States. There is a widespread popular belief that the food value of these different sorts varies as greatly as their color, but this is not the case. White, yellow, red, blue, and black corn are very much alike in composition, and are therefore equally valuable as sources of nourishment. They vary somewhat, however, in flavor. The liking for one or another is a personal or local matter.

The average percentage composition of these various kinds of corn is as follows: Water, 10.8; protein, 10.0; fat, 4.3; starch, sugar, etc., 71.7; crude fiber, 1.7; and mineral matter, 1.5. The fuel value per pound is 1,795 calories.

COMPARISON OF DIFFERENT PARTS OF THE KERNEL.

The percentage composition of Indian corn as given above is that of the whole kernel as distinguished from any of its parts. A grain of corn is complex in structure, and its different parts vary greatly in nutritive value. For our purpose here it may be considered to consist of skin, germ, and endosperm. The skin constitutes about 6 per cent of the whole weight of the kernel; the germ, which contains the embryo, from which under favorable conditions new life will spring, constitutes about 10 per cent; and the endosperm, which is the storehouse of food for the new life, constitutes about 84 per cent. Of the total amount of crude fiber in a kernel of corn, 51 per cent is in the skin; of the starch, 90 per cent is in the endosperm; and of the protein, 80 per cent is in the endosperm and 16 per cent in the germ; while of the fat, 65 per cent is in the germ.

OLD AND NEW PROCESS MEALS COMPARED.

The older types of corn meal were usually ground between mill-stones turned by water power, and the term "water-ground corn meal" is still used in some regions. The skin was ground with the rest of the kernel and then partially removed by means of sieves and other devices. The newer types of meal are usually ground between cylinders, the equipment being much more elaborate than in the old mills. In the newer processes the corn is first kiln-dried, after which the outer skin can be easily removed in one piece. The germ is also easily separated, and after skin and germ are removed the corn is ground, bolted, and purified by air currents. The effect of removing the skin whole in the new process is to reduce very much the percentage of fiber; that of removing the germ, to reduce the protein and the fat. New-process meal, therefore, has somewhat less protein and a slightly lower fuel value, besides a smaller percentage of fiber, than the old-process meal.

The removal of the germ, which contains the corn oil, a substance peculiarly liable to become rancid, and the kiln-drying of the grain, which lessens or destroys molds and decay-producing bacteria, are not, however, without their advantages, for they have the effect of improving the keeping qualities of the meal. While the new-process meal, therefore, has a slightly lower nutritive value, pound for pound, than the old process, it is less liable to deterioration. It is sometimes said that the newer type of meal becomes much hotter in grinding than meal made by the older methods, and that for this or other

reasons it does not possess so good a flavor as the old-fashioned meal; but those who have studied the subject carefully believe that any inferiority in dishes made from the new meal as compared with the old is due in part, at least, to the fact that cooks have not adjusted their methods to the changed character of the material.

A SPECIAL USE FOR CORN MEAL.

Corn meal, because of its lack of gluten, can not be made into light and porous breads except by the addition of eggs or of wheat, rye, Graham, or gluten flour, or in some similar way. The absence of gluten, which with water forms a sticky, tenacious mass, is responsible, however, for the fact that the meal retains much of its granular quality even after it has been mixed and heated with water. Dishes made with corn meal are likely to be more tender than those made with wheat, and the use of small amounts of corn meal in the making of such foods as waffles and doughnuts is to be recommended.

COMPOSITION OF CORN MEAL COMPARED WITH A BALANCED RATION.

In combining one food with others it is sometimes convenient to know how nearly it comes to being, in itself, a balanced ration, and also in what particulars it differs from such a ration. A pound of corn meal has a fuel value of 1,655 calories and contains 0.092 pound, or about 1.5 ounces, of protein or tissue-forming food. In the balanced ration for a person at moderate muscular work (as accepted by most authorities) the protein corresponding to a fuel value of 1,655 calories would be 0.118 pound, or 1.9 ounces. To each pound of corn meal on such a basis it is necessary to add 0.4 ounce of protein in order to make a ration in which tissue-forming material and fuel value are properly balanced. In the rational diet, therefore, corn meal is combined with foods which have more protein or less fat and carbohydrates than it has itself. Among such foods are milk, most kinds of meat and fish, eggs, and cheese. It is the common practice to eat corn-meal mush with milk, to add cheese to corn-meal mush which is to be fried, or to serve corn-meal preparations with meat. Fish balls with corn meal (for which a recipe is given on p. 5) is a dish which approximates the balanced ration.

COMPOSITION AND COST OF CORN MEAL COMPARED WITH OTHER PREPARED CEREALS.

The food values of the various kinds of corn meal average as follows: Water, 12.5; protein, 9.2; fat, 1.9; starch and sugar, 74.4; crude fiber, 1.0; and mineral matter, 1.0 per cent; and the fuel value per pound, 1,655 calories. For convenience this may be roughly stated in tenths, one-tenth being water, one-tenth protein, seven-tenths starch, the remaining tenth being divided among fat, fiber,

and mineral matter in approximately equal amounts. So closely does the composition of corn and Kafir meal resemble that of other prepared cereals that, pound for pound, they may all be considered to have the same food value. When corn meal or Kafir meal sells for a lower price per pound than some other cereal, the housekeeper may consider that she secures more food for her family for a given sum when she selects corn or Kafir meal. When corn meal or Kafir meal, for example, costs one-half as much per pound as some other cereal, the corn or the Kafir has an advantage of about 50 per cent.

COOKING CORN MEAL.

A study of the modifications in methods of cooking which have been rendered necessary by changes in the composition of the meal was made at Teachers College, Columbia University, New York City, for the Office of Experiment Stations. The results of these investigations, which are still unpublished, may be summarized as follows: In general, 10 per cent more water is needed for the new-process meal than for the old-process, and where the large amount of water used renders the meal liable to sink (in breads, for example), the mixture of meal and water should be thoroughly heated before being used.

In experiments made in this office it was found that, when convenience as well as the final result is taken into consideration, it is best for almost every purpose to put the meal and cold water together and then heat them over boiling water in a double boiler. Except when very finely ground meals are used it is unnecessary to stir the mixture at any time, not even when the meal and water are put together. The conclusion has been reached, in fact, that in all cases—even those in which the liquid used is not water but either sweet or sour milk—the best results are obtained by heating the meal and liquid together without stirring. This applies to the making of corn-meal mush and also to more complicated dishes, such as breads.

The following recipes¹ illustrate some of the points brought out in the foregoing pages:

SOUR MILK CORN BREAD.

2 cupfuls corn meal.	1½ teaspoonfuls salt.
2 cupfuls sour milk.	2 eggs.
2 tablespoonfuls butter.	1 teaspoonful soda.
2 tablespoonfuls sugar, white or brown.	1 tablespoonful cold water.

Cook the meal, milk, salt, butter, and sugar in a double boiler for about 10 minutes. When the mixture is cool, add the eggs well beaten and the soda dissolved in the water. Bake in a shallow iron or granite pan for about 30 minutes.

¹All measurements are level.

CUSTARD CORN CAKE.

2 eggs.	1 cupful sweet milk.
$\frac{1}{4}$ cupful sugar.	$1\frac{1}{2}$ cupfuls corn meal.
1 teaspoonful soda.	$\frac{1}{2}$ cupful wheat flour.
1 teaspoonful salt.	2 tablespoonfuls butter.
1 cupful sour milk.	1 cupful cream.

Beat the eggs and sugar together thoroughly. Sift the flour, soda, and salt together and mix them with the meal. Mix all the ingredients but the cream and butter. Melt the butter in a deep pan, using plenty on the sides. Pour in the batter, add (without stirring) a cupful of cream, and bake from 20 to 30 minutes. When cooked there should be a layer of custard on top of the cake, or small bits of custard distributed through it.

SPOON CORN BREAD.

2 cupfuls water.	1 tablespoonful butter.
1 cupful milk.	2 eggs.
$\frac{1}{2}$ cupful white corn meal.	2 teaspoonfuls salt.

Mix the water and the corn meal, and cook 5 minutes. Add the eggs, well beaten, and the other ingredients. Beat thoroughly and bake in a well-greased pan for 25 minutes in a hot oven. Serve from the same dish with a spoon.

CORN MEAL AND WHEAT WAFFLES.

$1\frac{1}{2}$ cupfuls water.	$1\frac{1}{4}$ tablespoonfuls baking powder.
$\frac{1}{2}$ cupful white corn meal.	$1\frac{1}{2}$ teaspoonfuls salt.
$1\frac{1}{2}$ cupfuls milk.	Yolks of 2 eggs.
3 cupfuls wheat flour.	Whites of 2 eggs.
3 tablespoonfuls sugar.	2 tablespoonfuls melted butter.

Cook the meal in the water 20 minutes; add milk, the dry ingredients mixed and sifted, the yolks of the eggs well beaten, the butter, and the whites of the eggs beaten stiff. Cook on a greased waffle iron.

CORN MEAL FISH BALLS.

2 cupfuls cold white corn-meal mush.	1 egg.
1 cupful shredded codfish.	1 tablespoonful butter.

Pick over the codfish and soak it to remove salt, if necessary. Combine the ingredients and drop by spoonfuls into hot fat. Drain on porous paper. These codfish balls compare very favorably in taste with those made with potato and are more easily and quickly prepared.

INDIAN PUDDING.

5 cupfuls milk.	$\frac{1}{2}$ cupful molasses.
$\frac{1}{2}$ cupful Indian meal.	1 teaspoonful salt.
1 teaspoonful ginger.	

Cook milk and meal in a double boiler 20 minutes; add molasses, salt, and ginger; pour into buttered pudding dish and bake 2 hours in slow oven; serve with cream.

KAFIR CORN.

Kafir corn was originally cultivated in South Africa, and takes its name from one of the native tribes. It was introduced into the United States in 1876. Because of its drought-resisting qualities it can be raised in localities too dry for the development of Indian corn. Up to this time it has been relatively little used for human food in the United States, though long a staple food in Africa, India, and China. In composition and digestibility, however, it differs little from Indian corn, as recent experiments in this office have shown. Its flavor is somewhat stronger, and while some people like it at once, others must acquire a taste for it.

THE COOKING OF KAFIR CORN.

Since Kafir corn resembles Indian corn closely in composition and nutritive value, it is unnecessary to treat of these subjects in detail here. Something, however, must be said about special precautions necessary in preparing it for the table. In making mush for use alone, or as a foundation for other dishes (yeast bread, gingerbread, etc.), the ingredients should be thoroughly mixed before being heated. Cooking should always be more thorough than for Indian corn. In making gingerbread with Indian meal, for example, it has been found sufficient to heat the meal and water for 10 minutes in a double boiler; but in making the same dish with Kafir meal it is necessary to cook the mush at least half an hour.

KAFIR CORN YEAST BREAD.

2 cupfuls Kafir corn meal.	3 teaspoonfuls salt.
2 cupfuls water.	Wheat flour.
2 tablespoonfuls sugar.	$\frac{1}{2}$ yeast cake (or 1 cake if haste
2 tablespoonfuls butter, lard, or other fat.	is an object) dissolved in $\frac{1}{4}$ cupful of lukewarm water.

Cook the meal, sugar, salt, and water together in a double boiler for an hour; add the butter and cool. Stir in the yeast mixed with a little water. Add enough wheat flour to make a soft dough (about 1 cupful). Turn onto a board and mold thoroughly. Form into a loaf and put in a warm place to rise. When light, bake in a moderate oven.

KAFIR CORN GEMS.

1 cupful Kafir corn meal.	$\frac{3}{4}$ teaspoonful salt.
$1\frac{1}{4}$ cupfuls buttermilk.	1 teaspoonful ginger.
$1\frac{1}{2}$ tablespoonfuls butter.	$\frac{1}{2}$ teaspoonful soda.
1 tablespoonful sugar.	

Cook the meal and the buttermilk together in a double boiler for a half hour or longer. While the mush is still warm, add the butter. When it is cool, add the other ingredients, dissolving the soda in about a tablespoonful of water. Bake in gem pans.

KAFIR CORN GINGERBREAD.

2 cupfuls Kafir corn meal.	1 teaspoonful powdered cinna- mon.
2½ cupfuls sour milk or butter- milk.	½ teaspoonful powdered cloves.
1 teaspoonful salt.	1½ teaspoonfuls soda.
2 tablespoonfuls butter.	¾ cupful sugar.
1 cupful wheat flour.	1 egg.
2 teaspoonfuls powdered ginger.	

Mix thoroughly the meal, buttermilk, and salt in a double boiler, and cook over hot water one-half hour or longer. Stir the butter into the mush while it is still warm. Sift together the flour, spices, and soda. When the mush is cool combine all the ingredients. Beat thoroughly and bake in a moderate oven in shallow iron pans.

DOUGHNUTS WITH KAFIR CORN.

2 cupfuls milk, or milk and water.	1½ cupfuls wheat flour.
1½ cupfuls Kafir corn.	1 teaspoonful cinnamon.
1 teaspoonful salt.	2 teaspoonfuls baking powder.
½ cupful butter.	2 eggs.
¾ cupful sugar.	

Heat the first three ingredients for a half hour or longer in a double boiler. Add the sugar and butter, and cool. Sift together the flour, cinnamon, and baking powder, and add to the cooled mush. Add the eggs well beaten and proceed as with other doughnuts.

KAFIR CORN AND PEANUT COOKIES.

2 tablespoonfuls butter.	½ cupful Kafir corn.
½ cupful sugar.	2 tablespoonfuls milk.
2 eggs.	½ cupful finely chopped peanuts.
1 teaspoonful baking powder.	1 teaspoonful powdered ginger.
½ teaspoonful salt.	

Cream the butter, add the sugar and the eggs, and beat well. Mix and sift baking powder, salt, flour, and ginger, and add them to the first mixture. Add the milk and the peanuts, and again beat thoroughly. Drop the mixture from a teaspoon onto an unbuttered pan, bake 15 minutes in a slow oven. Or spread it in a very thin layer on the bottom of a dripping pan, bake in a slow oven, and while still warm cut into squares.

COWPEAS.

The cowpea is a member of a large botanical family known as the Leguminosæ, whose fruit or seeded pods are called legumes. It is said to be native to Africa,¹ and early in the eighteenth century was introduced into the United States by way of the West Indies. Gradually it spread northward and late in the century we have record of its cultivation as an experimental crop on George Washington's farm in Virginia. Because of the great length of time it

¹ U. S. Dept. Agr., Bur. Plant Indus. Circ. 124.

requires to reach maturity, it can not be raised to mature its seed in the Northern States. In the South, however, it is cultivated extensively as a forage crop, for fodder, and also for human food. A large number of varieties with seeds of many shapes, sizes, and colors have been identified and named.¹

The cowpea is distinguished among the legumes for the peculiarly delicate and pleasing flavor of many varieties. It seems strange, therefore, that, though generally and favorably known as a staple food in the Southern States, it has not come into more general use in the dietary of the United States as a whole. Its failure to do so is probably attributable to the fact that no great effort has been made to create a general market for it. It is well worth very greatly extended use, as it is a wholesome, nutritious foodstuff from which a variety of palatable as well as economical dishes can be made.

Cowpeas are used on the table in three forms: In the pod, shelled green, and shelled dried. In these three forms they correspond, respectively, to string beans, shelled green peas, and dried navy beans, and call for much the same methods of preparation for the table.

COMPOSITION OF GREEN COWPEAS.

Green shelled cowpeas have the following percentage composition: Protein, 9.4; fat, 0.5; carbohydrates, 23; ash, 1.4. Their average fuel value per pound is 620 calories. Roughly speaking, and leaving out of account, for the moment, the small amount of fat and mineral matter, they are seven-tenths water, one-tenth protein, and two-tenths carbohydrates. In this unripe form they are naturally brought into comparison with other green vegetables. Even among the legumes they hold a high place, having an equally large amount of tissue-forming substances with green kidney beans, and more than peas or Lima beans. They have more than four times as much protein as an equal weight of potatoes, and nearly twice the fuel value. Tomatoes, green corn, asparagus, and carrots (four vegetables taken at random but nevertheless representative of fresh vegetables other than legumes and potatoes) have, on an average, less than one-fifth as much protein as cowpeas, and hardly a third of their fuel value. Even in its unripe form, therefore, the cowpea gives promise of those qualities which have led to its classification and use as a meat substitute.

COMPOSITION OF DRIED COWPEAS.

In the process of drying, the cowpea loses about four-fifths of its water. As the water decreases, protein increases from 9.4 to 21.4 per cent; fat, from 0.5 to 1.4 per cent; carbohydrates, from 23 to 60.8

¹ U. S. Dept. Agr., Bur. Plant Indus. Bul. 229.

per cent; ash, from 1.4 to 3.4 per cent; and the fuel value, from 620 to 1,590 calories. In the dried form it is natural to compare the cowpea with the cereal grains because of its close physical resemblance to them. Such comparison, however, reveals little likeness in percentage composition. Eight of the common cereal grains—Indian corn, barley, Kafir corn, oats, rice, rye, buckwheat, and wheat—have on an average 10.7 per cent of protein, or less than half as much as dried cowpeas. In fact, so far as nutritive value is concerned, cowpeas and other legumes are not to be classed with vegetable foods but with meats and other animal products.

COMPOSITION OF COWPEAS AS COMPARED WITH THAT OF BEEF.

A side of beef averages 15.2 per cent protein; or, to put it in another way, every pound of such meat contains 2.4 ounces of protein. The fuel value per pound is 935 calories. A pound of dried cowpeas, on the other hand, contains 3.4 ounces of protein and has a fuel value of 1,590 calories. This comparison, however, loses much of its significance unless taken in connection with the digestibility of these two foods, which is considered in the next paragraph.

DIGESTIBILITY OF COWPEAS.

A few years ago extensive investigations upon the digestibility of legumes were made at the University of Tennessee in cooperation with this office.¹ In the course of this work, three varieties of cowpeas—the Whippoorwill, the Clay, and the Lady—were studied, and it was shown that 70, 74, and 83 (average 76) per cent, respectively, of the protein and 87, 88, and 95 (average 90) per cent of the carbohydrates were digested. These are very close to the figures for other vegetable foods, but much lower than those for meats, which have been shown to be about 98 per cent for both protein and fat.² By the use of these figures, it is easy to calculate that of the 3.4 ounces of protein in a pound of cowpeas, only 2.6 ounces is likely to be digested; while approximately all of the protein in a pound of beef (2.4 ounces) is digested. This brings the two food materials close together, so far as their value for tissue-formation is concerned, but leaves the fuel value of the cowpeas considerably in excess over the beef (about 1,300 or 1,400 as compared with 935 calories).

COST OF COWPEAS.

In regions where they are raised dried cowpeas are usually sold by the bushel, every bushel weighing about 60 pounds. In other places

¹ U. S. Dept. Agr., Office Expt. Stas. Bul. 187.

² U. S. Dept. Agr., Office Expt. Stas. Bul. 193.

they are sold by the quart, which weighs not far from 2 pounds, the exact amount depending, of course, upon the size of the peas. If the housekeeper remembers these weights she has at hand the means of comparing roughly the cost of cowpeas with that of other foods at the prices current in her own district. When cowpeas sell for \$1.20 per bushel, for example, their price per pound is 2 cents, and when they sell for 15 cents per quart their price per pound is about 8 cents. In either case they are much cheaper than meat at the usual prices.

FOOD VALUE OF COWPEAS COMPARED WITH A BALANCED RATION.

In the balanced ration a food which contains 3.4 ounces of protein (as a pound of dried cowpeas does) should yield at least 3,000 calories. Cowpeas, therefore, which yield 1,590 calories for every 3.4 ounces of protein, need to be supplemented in the diet by foods which have a greater fuel value in comparison with their tissue-forming material. This indicates the reasonableness of the many combinations that are made with cowpeas: Cowpeas and rice, for example, to form "Hopping John"; cowpeas baked with salt pork; succotash; and salads, in which the peas are served with a dressing rich in oil, butter, or other fat.

METHODS OF COOKING COWPEAS.

As suggested above, cowpeas in the pod and also green shelled cowpeas, are usually cooked like string beans or ordinary green peas, in boiling salted water and served with a little butter, milk or cream. Precaution, however, should be taken not to gather or shell the green cowpeas long before they are to be cooked, for if this is done their fine flavor is likely to be greatly lessened. Dried cowpeas should be soaked over night or an equivalent length of time by day, and as they are likely to ferment they should be kept in a cool place. When soaked they double in volume and when boiled until tender they increase still further in size until every cupful of the dried peas has become nearly two and a half cupfuls of cooked peas. These figures may be helpful to cooks in changing the items in a receipt from raw to cooked peas, or vice versa.

It is a common practice in some places to remove the skin of the cowpeas after they have been soaked. This improves their appearance very much, for the interior portion is white in all varieties of the peas. It also, no doubt, renders them more completely digestible. It is, however, a most laborious process, particularly if the peas are of different varieties and consequently of different sizes. The skins are usually removed by rubbing the peas between the hands under

water, and if some peas are smaller than the others, they are likely to escape without having their skins broken. This way of treating the peas is, therefore, not to be recommended except where very delicate dishes are desired for the use of invalids or for other purposes.

BAKED COWPEAS.

Cook 1 quart of large white cowpeas slowly in water until they begin to soften. This will require five or six hours. Put them into a bean pot, add one-half pound of salt pork, and 1 tablespoonful of molasses. Cover with water and bake slowly six or seven hours. It is well to have the pot covered except during the last hour.

HOPPING JOHN.

Soak 1 quart of dried cowpeas over night in water enough to cover. Cook until they are tender, adding more water if necessary. Cook a pint of rice in 3 pints of water, mix the two, season with 2 tablespoonfuls of butter and 2 teaspoonfuls of salt. A little beef or pork may be added to the water in which the peas are cooked.

COWPEA SOUP.

1 tablespoonful butter or pork fat.	1 cupful dried cowpeas.
1 tablespoonful finely chopped onion.	Salt.
1 stalk celery, finely chopped.	

Soak the peas 8 or 10 hours in water enough to cover. Fry the vegetables in the butter, add the peas, in the water in which they were soaked, and cook (preferably in a double boiler) until the peas are tender. Put the mixture through a sieve and add water enough to bring it to the desired consistency. Reheat. If this soup is thickened with 1 tablespoonful of flour mixed with a little water, the pea pulp will be prevented from sinking.

CREAM OF COWPEA SOUP.

1 tablespoonful butter.	1 cupful cooked cowpeas (green or dried).
1 tablespoonful flour.	
2 cups milk.	A few drops of onion juice.
1 teaspoonful sugar.	Salt.

Melt the butter, add the flour, and cook thoroughly, being careful not to brown it. Add the milk and bring the mixture to the boiling point. Put the peas through a sieve; add peas and seasonings to the milk and reheat. If too thick, add milk or water. Serve with croutons made by heating buttered bread in the oven until it is brown, and cutting it into small pieces.

COWPEAS WITH ROAST PORK.

When a roast of pork is nearly done, pour off most of the fat in the pan and add cowpeas which have been soaked and cooked until they are soft. Allow the pork fat to drip upon them, and cook until they are brown.

PURÉE OF PEAS.

Soak 1 pint of cowpeas in cold water over night. Cook until soft in just enough water to cover. Drain and pass through a sieve. Season with salt, pepper, $\frac{1}{2}$ cupful of cream, and 2 teaspoonfuls of brown sugar. Or substitute milk for the cream and add a tablespoonful of butter. Beat thoroughly, reheat, and serve like mashed potatoes.

BAKED COWPEAS AND CHEESE: A MEAT SUBSTITUTE.

- | | |
|--|-------------------------------------|
| 1 tablespoonful butter. | 2 cupfuls cooked cowpeas. |
| 1 tablespoonful finely chopped onion. | $\frac{1}{2}$ cupful grated cheese. |
| 1 tablespoonful finely chopped sweet green pepper. | |

Press the peas through a sieve to remove the skins, and mix with the cheese. Cook the onion and pepper in the butter, being careful not to brown, and add them to the peas and cheese. Form the mixture into a roll, place on a buttered earthenware dish and cook in a moderate oven until brown, basting occasionally with butter and water. Serve hot or cold as a substitute for meat.

GREEN PEPPERS STUFFED WITH COWPEAS.

Cut sweet green peppers into two pieces lengthwise, remove all the seeds, and fill each piece with the mixture described in the above recipe. Place in a dish containing a small amount of butter and water. Bake in a moderate oven until the peppers are soft. Baste occasionally.

BAKED TOMATOES WITH COWPEAS.

Cut the tops from ripe tomatoes of uniform size, remove the pulp, and add it to the mixture described in the recipe for baked cowpeas and cheese. Salt the tomatoes on the inside and fill them with the cowpea mixture. Bake on a buttered dish until the tomatoes are soft.

SANDWICH FILLING.

The mixture of cooked peas and cheese may be used for a sandwich filling. In fact, cooked cowpeas mashed and freed from the skins by being put through a sieve may form the basis of a large variety of sandwich fillings. The cheese may be omitted and chopped celery or nuts added, or the peas may be mixed with a little butter and a few drops of vinegar or lemon juice. Leaves of lettuce dipped in salad dressing add to the attractiveness of the sandwiches.

COWPEA SALAD.

Mix cold cooked cowpeas with French dressing and serve on lettuce, endive, or water cress. The proportions for the French dressing are: 3 tablespoonfuls of salad oil, 1 tablespoonful of vinegar, and one-half teaspoonful of salt. Add a few grains of cayenne pepper.

PUBLICATIONS OF THE UNITED STATES DEPARTMENT OF AGRICULTURE RELATING TO FOOD CONSERVATION.

PUBLICATIONS AVAILABLE FOR FREE DISTRIBUTION.

- Beans, Peas, etc., as Food. Farmers' Bulletin No. 121.
Cereal Breakfast Foods. Farmers' Bulletin No. 249.
Food Value of Corn and Corn Products. Farmers' Bulletin No. 298.
Cowpeas. Farmers' Bulletin No. 318.
Kafir as a Grain Crop. Farmers' Bulletin No. 552.
Pop Corn for the Home. Farmers' Bulletin No. 553.
Corn Meal as a Food: Ways of Using It. Farmers' Bulletin No. 565.
School Lessons on Corn. Farmers' Bulletin No. 617.
Food for Young Children. Farmers' Bulletin No. 717.
How to Select Foods. II. Cereal Foods. Farmers' Bulletin No. 817.
Home Canning by the One-Period Cold-Pack Methods. Farmers' Bulletin No. 839.
Drying Fruits and Vegetables in the Home. Farmers' Bulletin No. 841.
Home Canning of Fruits and Vegetables. Farmers' Bulletin No. 853.
Composition of Corn (Maize) Meal Manufactured by Different Processes and the Influence of Composition on the Keeping Qualities. Department Bulletin No. 215.

PUBLICATIONS FOR SALE BY THE SUPERINTENDENT OF DOCUMENTS, GOVERNMENT PRINTING OFFICE, WASHINGTON, D. C.

- The Determination of the Deterioration of Maize with Incidental Reference to Pellagra. Bureau of Plant Industry Bul. 199. Price 5 cents.
The Influence of Environment on the Composition of Sweet Corn. Chemistry Bulletin No. 127. Price 10 cents.
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